

- 25 -

CLAIMS

1. A predictive dialling system for a call centre including a plurality of agent workstations, each agent workstation comprising:

means for producing signals effective to cause a display to display a script for prompting the agent in a telephone conversation with a telephone respondent;

means for entering information obtained from the telephone respondent in response to questions prompted by the script into the workstation; and

means for producing status signals indicative of the progression of the agent through the script;

the predictive dialling system comprising:

means for storing statistical data regarding the connection of previous telephone calls;

means for receiving the status signals produced by each agent station;

means for predicting from the statistical data and the status signals how many new calls should be dialled to enable agents who have finished their previous call by the time each new call is answered by a respective telephone respondent to take all the new calls; and

means for generating signals effective to cause said new calls to be dialled.

- 26 -

2. A predictive dialling system according to claim 1 including a database system for storing telephone numbers to be called, and a cache for storing a selection of the stored telephone numbers, wherein when the predicting means predicts the number of new calls to be made, the appropriate number of telephone numbers are retrieved from the cache.

3. A predictive dialling system according to either of the preceding claims wherein the statistical data comprises the percentage of successful telephone connections made out of the total number of calls over a predetermined period of time.

4. A predictive dialling system according to any one of the preceding claims wherein the statistical data comprises an indication of the number of calls in excess of the number of available agents which the system can tolerate.

5. A predictive dialling system according to any one of the preceding claims wherein the statistical data includes the ratio of the nuisance call rate to the nuisance call rate target.

- 27 -

6. A predictive dialling system according to any one of the preceding claims in which said means for predicting is arranged to predict the number, N_{dial} , of calls from the number of available agents currently not engaged on a call, the number of agents who have currently reached predefined points within a script, the percentage of successful connections out of the total number of calls made in a predetermined time period, the percentage of successful connections out of the total number of calls made over a predetermined time period, and the percentage of calls answered with no agent available to take the call over a predetermined time period.

7. A predictive dialling system according to claim 6 wherein

$$N_{\text{dial}} = I + \frac{\alpha I + \beta R + \chi A + \delta G}{S_r(\Theta + \tan(\frac{\pi N_r}{2 N_t}))}$$

where I is the number of available agents currently not engaged on a call;

R , A and G are the number of agents who have reached predetermined points in their respective scripts and have sent said status signals to the predictive dialling

- 28 -

system;

$\alpha, \beta, \chi, \delta$ are constants;

S_r is the percentage of successful connections out of the total number of calls made measured over a predetermined time period;

θ is an adjustment constant;

N_r is the percentage of calls answered by a telephone respondent but with no agent available to take the call measured over a predetermined time period; and

N_t is the target percentage of calls answered by a telephone respondent but with no agent available to take the call.

8. A predictive dialling system according to any one of the preceding claims including means for adjusting the parameters used by the means for predicting.

9. A predictive dialling system according to claim 8 including means for providing a user interface enabling display of the statistical performance of the system, and means for enabling a user to adjust said parameters.

10. A predictive dialling system according to any one of the preceding claims in which where the number of calls which are predicted is less than the calls which

- 29 -

are currently being dialled, the system includes means for cancelling some of the calls currently being dialled.

11. A predictive dialling system according to any one
5 of the preceding claims including means for sending a signal to a workstation effective to initiate the running of a new script at the workstation when the workstation has been allocated a new answered telephone call.

10 12. A scripting system for use in an agent workstation in a call centre, the workstation comprising:

means for receiving telephone calls; and

a display means;

the scripting system comprising:

15 means for providing signals effective to cause the display means to display a script for prompting an agent in a telephone call with a telephone respondent;

means for recording information obtained from the telephone respondent and sending signals representative
20 of said information to a storage means;

means for producing status signals representative of the progression of the agent through the script; and

means for sending said status signals to a predictive dialling system.

- 30 -

13. A scripting system according to claim 12 including means for receiving signals from the predictive dialling system effective to initiate the display of a new script synchronised with the receipt of a new telephone call.

5

14. A predictive dialling method for a call centre including a plurality of agent workstations, each agent workstation performing the steps of:

10 producing signals effective to cause a display to display a script for prompting the agent in a telephone conversation with a telephone respondent;

 entering information obtained from the telephone respondent in response to questions prompted by the script into the workstation; and

15 producing status signals indicative of the progression of the agent through the script;

 the predictive dialling method comprising:

 storing statistical data regarding the connection of previous telephone calls;

20 receiving the status signals produced by each agent station;

 predicting from the statistical data and the status signals how many new calls should be dialled to enable agents who have finished their previous call by the time
25 each new call is answered by a telephone respondent to

- 31 -

take all the new calls; and

generating signals effective to cause said new calls
to be dialled.

5 15. A predictive dialling method according to claim 13
including storing telephone numbers to be called in a
database system, and storing a selection of the stored
telephone numbers in a cache, wherein when the predicting
means predicts the number of new calls to be made, the
10 appropriate number of telephone numbers are retrieved
from the cache.

16. A predictive dialling method according to claim 14
to 15 wherein the statistical data comprises the
15 percentage of successful telephone connections made out
of the total number of calls over a predetermined period
of time.

17. A predictive dialling method according to any one
20 of claims 14 to 16 wherein the statistical data comprises
an indication of the number of calls in excess of the
number of available agents which the system can tolerate.

18. A predictive dialling method according to any one
25 of claims 14 to 17 wherein the statistical data includes

- 32 -

the ratio of the nuisance call rate to the nuisance call rate target.

19. A predictive dialling method according to any one of claims 14 to 18 in which where the number of calls which are predicted is less than the calls which are currently being dialled, cancelling some of the calls currently being dialled.

20. A predictive dialling method according to any one of claims 14 to 19 in which said predicting step predicts the number, N_{dial} , of calls from the number of available agents currently not engaged on a call, the number of agents who have currently reached predefined points within a script, the percentage of successful connections out of the total number of calls made in a predetermined time period, the percentage of successful connections out of the total number of calls made over a predetermined time period, and the percentage of calls answered with no agent available to take the call over a predetermined time period.

21. A predictive dialling method according to claim 20 wherein

- 33 -

$$N_{\text{dial}} = I + \frac{\alpha I + \beta R + \chi A + \delta G}{S_r (\Theta + \tan(\frac{\pi N_r}{2 N_t}))}$$

5 where I is the number of available agents currently not engaged on a call;

R, A and G are the number of agents who have reached predetermined points in their respective scripts and have sent said status signals to the predictive dialling
10 system;

$\alpha, \beta, \chi, \delta$ are constants;

S_r is the percentage of successful connections out of the total number of calls made measured over a predetermined time period;

15 Θ is an adjustment constant;

N_r is the percentage of calls answered by a telephone respondent but with no agent available to take the call measured over a predetermined time period; and

N_t is the target percentage of calls answered by a
20 telephone respondent but with no agent available to take the call.

22. A predictive dialling method according to any one of claims 14 to 21 including the step of sending a signal
25 to a workstation effective to initiate the running of a

- 34 -

new script at the workstation when the workstation has been allocated a new answered telephone call.

23. A scripting method in an agent workstation in a call centre, the workstation comprising:

means for receiving telephone calls; and

a display means;

the scripting method comprising the steps of:

providing signals effective to cause the display

means to display a script for prompting an agent in a telephone call with a telephone respondent;

recording information obtained from the telephone respondent and sending signals representative of said information to a storage means;

producing status signals representative of the progression of the agent through the script; and

sending said status signals to a predictive dialling system.

24. A scripting method according to claim 23 including the step of receiving signals from the predictive dialling system effective to initiate the display of a new script synchronised with the receipt of a new telephone call.

- 35 -

25. A computer program including processor implementable instructions for performing a method according to any one of claims 14 to 24.

5 26. A computer program product carrying a computer program according to claim 25.

10 27. A predictive dialling system substantially as hereinbefore described with reference to the accompanying drawings.

28. A predictive dialling method substantially as hereinbefore described with reference to the accompanying drawings.